

# IN DEFENCE OF LUTHER GULICK'S 'NOTES ON THE THEORY OF ORGANIZATION'

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THOMAS H. HAMMOND

This article reviews a debate in public administration which occurred some 40 years ago between two giants of public administration, Luther Gulick and Herbert Simon. Simon is generally considered to have 'won' the debate in the 1940s and 1950s, and there is good reason to think that this 'victory' turned the field of public administration in a direction very different from where it had been headed previously. The paper makes two arguments. The first argument is that a close examination of the key articles – Gulick's 'Notes on the Theory of Organization' (1937) and Simon's 'The Proverbs of Administration' (1946) – shows that Gulick's essay was not nearly as vulnerable to Simon's criticisms as has commonly been assumed. In general, Gulick's arguments are richer and far more subtle than Simon recognized. The second argument has a more current focus: had Gulick's approach been pursued in the ways Gulick suggested, there is reason to think we would know considerably more about the design of organizational structures than we currently do.

## I. INTRODUCTION

In 1937, Luther Gulick and Lyndall Urwick published a collection of papers which included an essay by Gulick entitled, 'Notes on the Theory of Organization.' Gulick had originally written this essay while a member of President Franklin D. Roosevelt's 'Brownlow Commission', appointed to make recommendations for reorganizing the federal executive branch in the United States. Gulick's essay was an effort at developing a conceptual framework which could guide the commission when it made recommendations for reorganization. The essay clearly exhibited by far the most sophisticated understanding of the problem of organizational design by any scholar up to that time.

Nine years later, in 1946, Herbert A. Simon published a biting critique of the so-called 'principles of administration' school of thought, and Simon included Gulick's essay as one of several representative works. Simon derided this school for advancing what he called 'the proverbs of administration', the title of his own essay. For every 'proverb' of administration that had been advanced, Simon cited another, equally plausible but with exactly the opposite meaning for design. Thus the recommendations of the 'principles of administration theorists' were logically contradictory, and so were vacuous and useless.

Thomas H. Hammond is Associate Professor in the Department of Political Science, Michigan State University.

Due to the force, incisiveness, and apparent brilliance of his attack, Simon was generally considered to have 'won' this intellectual encounter, as befitted a future Nobel Prize winner, and his essay marked the beginning of the end for the study of the 'principles of administration'. Gulick's essay, and the school of thought it supposedly represented, gradually fell into disrepute, his essay seen as representing an interesting – though fatally flawed – approach to the study of organization.

Simon did more than simply discredit an older style of thinking – in intellectual life, one seldom replaces something with nothing – for he proposed in its place an approach based on the study of decision-making and on the capacities of individual decision-makers. The guiding disciplines were to be psychology and sociology; as Simon put it in 'Decision-making and Administrative Organization' (1944), 'the construction of an efficient administrative organization is a problem in social psychology' (p. 16). Simon's subsequent work – in *Administrative Behavior* (1947), in the papers in *Models of Man* (1956), and in *Organizations* (1958), co-authored with James March – developed this approach in a coherent and fruitful manner. The continuing impact of Simon's approach can be seen in the Richard Cyert/James March volume, *A Behavioral Theory of the Firm* (1963), Graham Allison's 'Organizational Process' model in *Essence of Decision: Explaining the Cuban Missile Crisis* (1971), John Steinbruner's *A Cybernetic Theory of Decision* (1974), and March's 'Bounded Rationality, Ambiguity, and the Engineering of Choice' (1978).

Prior to the 1950s, students of public administration had found questions about the design and reorganization of organizational structures to be among the most vital and stimulating in their field. Among the available studies, for example, one finds Willoughby (1923), White (1926), Gulick and Urwick (1937), Meriam (1939), Macmahon, Millett, and Ogden (1941), Macmahon (1945), and Gulick (1948). Following Simon's critique, to be sure, interest in these structural issues did not die out completely, as studies by Hobbes (1953), Macmahon (1953), Mosher (1967), Emmerich (1971), Mohr (1971), and Kaufman (1970, 1977) suggest. But Simon's kind of studies represented the new wave in organizational theory, and it is apparent that questions about structural design no longer seemed central or particularly vital to many students of public administration. In fact, the new style was to downgrade the importance of the formal hierarchical structure of bureaucracy. What came to be known as the 'informal organization' was what was important.

Some scholars objected to this emphasis, Rourke (1969), for example, criticizing the 'strong tendency in at least the more sophisticated literature of American public administration to discount the importance of hierarchy in bureaucracy' (p. 104). And in fact, no one has ever demonstrated, either theoretically or empirically, the irrelevance of the formal structure. Yet until recently, at least, attention paid to the formal hierarchical structure was overshadowed by the much greater attention paid to informal psychological and sociological processes within bureaucracy.

While preparing a recent article (Hammond 1986) on the political implications of formal organizational structures, I had occasion to re-read the Gulick and Simon essays. A side-by-side analysis of the two essays showed, to my surprise, that Gulick's approach to the study of organization was simply not vulnerable to most of

Simon's criticisms. Despite the favourable response in the field of public administration to Simon's criticisms, it became apparent to me that Simon was discussing weaknesses that Gulick's essay simply did not have. In no way did Gulick merely codify some 'principles of administration' and apply them in a crude, mechanical fashion to organizations. Instead, it seemed to me that Gulick showed a clear awareness of the complexities of designing organizations. Overall, I came to believe, Gulick's essay had an intellectual subtlety, coherence, and sophistication which Simon completely failed to recognize or acknowledge.

Simon's critique focused on a number of 'principles of administration' studies, not just on Gulick's, and perhaps it is for this reason that Simon generally ignored the subtleties in Gulick's work. Whatever the reason, it cannot be doubted that Simon's criticisms had a great impact on perceptions of Gulick's work. For example, Dwight Waldo (1961) observed that

since publication of the *Papers [on the Science of Administration]* in 1937, a generation of younger students have demolished the classical theory, again and again; they have uprooted it, threshed it, thrown most of it away. By and large, the criticisms of the new generation have been well-founded. In many ways the classical theory was crude, presumptuous, incomplete – wrong in some of its conclusions, naive in its scientific methodology, parochial in its outlook. In many ways it was the End of a Movement, not the foundation for a science (p. 220).

Millet (1968, p. 68) reviewed similar criticisms of Gulick's essay and concluded that they have 'in large part been justified'. Wallace Sayre (1958, p. 103) expressed the opinion that the *Papers* and the Brownlow Commission report of 1937 (Gulick served on the Brownlow panel and originally wrote his essay as a memo to the panel) 'represent the high noon of orthodoxy in public administration theory in the United States.'

Gulick has had a few defenders. For example, Seidman (1970, pp. 5, 6) refers to the 'important caveats and qualifications emphasized by Luther Gulick . . .' and notes that these reservations 'have been largely ignored by both his critics and disciples'. Altschuler (1968) likewise argues that

In fact, Simon was being unfair to the most sophisticated among the students of administration who had written before him. Gulick, for example, had fully recognized the proverbial nature of the 'principles of administration' . . . The difference between Simon and Gulick . . . was not that the former could tell a proverbial from a scientific principle. It was rather that the latter considered some proverbs very useful – as checklists of factors worth considering, as handy cores around which to organize one's thoughts, and as the closest brief approximations of wisdom available in many circumstances (pp. 60, 61).

In fact, Ostrom (1973, p. 36) goes so far as to present Gulick's essay as undermining the earlier approach: ' . . . Gulick advances theses which challenge the very foundations of the traditional theory of public administration.' Nonetheless, these iconoclastic defences have had little impact on the conventional wisdom about who won the Gulick-Simon 'debate'.

The year 1987 was the 50th anniversary of Gulick's essay, and in this paper I would like to provide a belated celebration by offering a defence of Gulick's essay against the criticisms raised by Simon. My goal is not so much to criticize Simon's essay but to resurrect Gulick's from the oblivion to which Simon is thought to have consigned it.

One might wonder why we should care about who 'won' this half-century old debate? After all, there is little likelihood that the field of public administration will be substantially influenced by my defence. In fact, it is difficult to cite *any* instances in which a scholarly re-evaluation of some old writer or work in public administration has materially changed the field's intellectual direction. In this sense, a re-evaluation of Luther Gulick, or any other writer, is largely a historical curiosity, a mere footnote to the progress of science.

Yet there are some intellectually valid reasons for reviewing this old debate. One reason involves the question of why the study of public administration has taken the directions it has. Given the past century's studies of bureaucracy and given the enormous importance of bureaucracy in the modern state, it has seemed to me an absolutely remarkable state of affairs that, for the 1980s, we should know so little about the political aspects of bureaucratic hierarchies. While working on my 1986 paper, I kept asking myself, 'Why hasn't someone already settled all these questions I am grappling with?' I came to believe that Simon's critique was the reason: it discredited, and thereby snuffed out, an important and potentially fruitful line of inquiry. Thus if we want to know why our field has focused on some kinds of subjects rather than others, an understanding of the Gulick-Simon 'debate' seems essential.

A second reason is that there has been a renewed interest in recent years in problems of the design of the formal structures of bureaucracy; see the excellent summary and synthesis by Mintzberg (1979), for example. Yet the study of politics in hierarchies has lacked a unifying approach or theme on which we could base our research. Gulick's essay can be seen as providing a foundation for studies of the politics of bureaucratic hierarchies. My own suggestions of how to think about hierarchies – see especially Hammond (1986) and Hammond and Thomas (1989) – certainly owes far more to Gulick than to Simon. Thus Gulick's essay has far greater relevance to current studies of hierarchy than has generally been recognized.

A third reason involves the fact that Gulick made insightful comments about a number of issues other than those directly involving formal hierarchies. As just one example, one can find in Gulick some remarkably prescient remarks of the kind that Simon later elaborated in his celebrated studies of 'bounded rationality'. Thus if one thinks it important to trace the roots of several different areas of bureaucratic study (to be detailed here later), one would do well to read Gulick.

The final reason is perhaps the most important: it is simple intellectual justice. Gulick's and Simon's essays are still widely read in public administration courses (at least in the US), and since Simon's criticisms of Gulick have never been systematically refuted, students of public administration are still being led to think (as I was in graduate school in the 1970s) that there is something silly, *passé*, and contradictory about Gulick's style of analysis. His valuable and insightful essay,

in other words, is still being subjected to gross misinterpretation. Public administration scholars do not often have to address questions of justice – our subject seems to lend itself more easily to other concerns. Yet when an intellectual injustice has been done in our field, one has an obligation to respond.

Part II of my essay summarizes Gulick's central points. Part III analyses Simon's criticisms in his 'Proverbs' essay and defends Gulick's essay against these criticisms. These first two parts form the bulk of my essay. Part IV demonstrates that Gulick himself recognized the limits of rationality as an issue integral to the problem of organizational design. Part V provides evidence that Gulick's work remains a fruitful source of approaches and ideas for the study of public administration.

## II. LUTHER GULICK'S APPROACH TO ORGANIZATION

I begin with an exegesis of Gulick's essay. Especially emphasized are passages suggesting he foresaw the problem which Simon later raised against the principles of administration studies.

### **The division of labour**

Gulick began his essay with the assertion that the division of labour was the beginning point for understanding organization:

Every large-scale or complicated enterprise requires many men to carry it forward. Wherever many men are thus working together the best results are secured when there is a division of work among these men. The theory of organization, therefore, has to do with the structure of co-ordination imposed upon the work-division units of an enterprise. Hence it is not possible to determine how an activity is to be organized without, at the same time, considering how the work in question is to be divided. Work division is the foundation of organization; indeed, the reason for organization (p. 3).

If work division is the foundation of organization, then 'co-ordination becomes mandatory' (p. 6). Co-ordination can be achieved in two ways:

1. By organization, that is, by interrelating the subdivisions of work by allotting them to men who are placed in a structure of authority, so that the work may be co-ordinated by orders of superiors to subordinates, reaching from the top to the bottom of the entire enterprise.
2. By the dominance of an idea, that is, the development of intelligent singleness of purpose in the minds and wills of those who are working together as a group, so that each worker will of his own accord fit his task into the whole with skill and enthusiasm (p. 6).

Simon focused his criticisms on principles regarding the first method, co-ordination by organization. Nonetheless, Gulick considered the second method to be at least as essential in the management of organizations, so we will review this discussion also.

### **The span of control**

Gulick argued that achievement of the organization's central purpose or objective requires a 'single directing executive authority' to 'co-ordinate and energize all of the sub-divisions of work...' (p. 6). But, said Gulick

we are confronted at the start by the inexorable limits of human nature. Just as the hand of man can span only a limited number of notes on the piano, so the mind and will of man can span but a limited number of immediate managerial contacts. . . . The limit of control is partly a matter of the limits of knowledge, but even more is it a matter of the limits of time and of energy. As a result the executive of any enterprise can personally direct only a few persons (p. 7).

While unavoidably limited, what span of control should be adopted was not known: 'We enter a realm of experience which has not been brought under sufficient scientific study to furnish a final answer' (p. 8). The proper span of control differed from situation to situation, and three factors were especially important. First was the *diversification of function*: the greater the diversity of functions of the subordinates, the narrower should be the span of control. Second was the factor of *time*: 'In a stable organization the chief executive can deal with more immediate subordinates than in a new or changing organization.' Third was the factor of *space*: 'An organization located in one building can be supervised through more immediate subordinates than can the same organization if scattered in several cities.'

### The unity of command

Whatever span of control was chosen for an executive, Gulick asserted that no worker should have more than two masters. This was the principle of 'unity of command'. Gulick here criticized Frederick Winslow Taylor's suggestion in *Shop Management* (1911) that separate foremen for machinery, materials, speed, and quality be appointed to give orders directly to the individual workman. Said Gulick, 'A workman subject to orders from several superiors will be confused, inefficient, and irresponsible; a workman subject to orders from but one superior may be methodical, efficient, and responsible' (p. 9). Gulick acknowledged that 'rigid adherence to the principle of unity of command may have its absurdities', but he nonetheless insisted that these absurdities were 'unimportant in comparison with the certainty of confusion, inefficiency and irresponsibility which arise from the violation of the principle'.

### The principle of homogeneity

If each executive's span of control is limited, and if each worker has only one immediate supervisor from whom orders are received, a hierarchy of supervision must be created: the workers must be grouped into offices under the supervision of middle-level managers. Gulick argued that the 'principle of homogeneity' should guide these grouping decisions: 'The efficiency of a group working together is directly related to the homogeneity of the work they are performing, of the processes they are utilizing, and of the purposes which actuate them' (pp. 9–10). When non-homogeneous work activities are brought together in a single work unit, 'the danger of friction and inefficiency' will be encountered (p. 10).

Gulick noted that the span of control had a 'top-down' aspect while homogeneity of work groups had a 'bottom-up' aspect. It was clear that the designer of an organization had to 'reconcile' (p. 12) these span-of-control and homogeneity-of-work-group principles. Said Gulick:

In planning the first subdivisions under the chief executive, the principle of the limitation of the span of control must apply; in building up the first aggregates of specialized functions, the principle of homogeneity must apply. If any enterprise has such an array of functions that the first subdivisions from the top down do not readily meet the first aggregations from the bottom up, then additional divisions and additional aggregates must be introduced, but at each further step there must be a less and less rigorous adherence to the two conflicting principles until their juncture is effected (p. 12).

#### Four methods of departmentalization

Building an organization from the bottom-up requires grouping work activities so as to maintain their homogeneity. This, said Gulick, 'is not a simple matter, either practically or theoretically' (p. 15) because work has different characteristics which imply different ways of grouping on the basis of homogeneity:

It will be found that each worker in each position must be characterized by:

1. The major *purpose* he is serving, such as furnishing water, controlling crime, or conducting education;
2. The *process* he is using, such as engineering, medicine, carpentry, stenography, statistics, accounting;
3. The *persons or things* dealt with or served, such as immigrants, veterans, Indians, forests, mines, parks, orphans, farmers, automobiles, or the poor;
4. The *place* where he renders his service, such as Hawaii, Boston, Washington, the Dust Bowl, Alabama, or Central High School (p. 15; emphasis in this and all following quotations in the original).

When everyone's work is homogeneous – 'where two men are doing exactly the same work in the same way for the same people at the same place – then 'the specifications of their jobs will be the same under 1, 2, 3, and 4. All such workers may be easily combined in a single aggregate and supervised together' (p. 15). But when any of the four items differ, each way of classifying work, and thus of grouping activities, leads to a different organizing decision. Consider a New York City doctor who spends his time in the public schools examining and attending to children in the Bronx. We could, Gulick noted, (1) say he is primarily working for the school system and thus place him under the department of education, (2) say he is primarily a medical man and place him in the department of health, (3) say that he is working with children and place him in the youth administration, or (4) say he is working in the Bronx and place him in the Bronx borough president's office. For this reason, there must be 'a selection among the items to determine which shall be given precedence in determining what is and what is not homogeneous and therefore combinable' (p. 15).

In an insightful and imaginative 16 pages (pp. 15–30) Gulick then considered the advantages and disadvantages of organizing work in each of these four ways. He recognized that his analysis was overly informal: 'Unfortunately we must rest our discussion primarily on limited observation and common sense, because little scientific research has been carried on in this field of administration' (p. 21). Moreover, he was well aware that application of each method of 'departmentalization' involved fundamental and unavoidable conflicts and tradeoffs.

For example, organizing by major purpose ran into 'the impossibility of cleanly dividing all of the work of any government into a few such major purposes which do not overlap extensively' (p. 22). Organizing on the basis of process presented similar difficulties:

As in the case of any other principle of organization, it is impossible to aggregate all of the work of the government on such a basis alone. It is not difficult to do so for engineering and medicine and teaching, but it becomes impossible when we reach typing and clerical work. It cannot furnish a satisfactory basis for doing the whole job in any large or complicated enterprise (p. 24).

Moreover,

there is always the danger that organization by process will hinder the accomplishment of major purposes, because the process departments may be more interested in *how* things are done than in *what* is accomplished. For example, a housing department which must clear the slums, build new low cost tenements and manage them, and inspect existing housing and approve new building plans, may find it difficult to make rapid progress if it must draw its legal help from the corporation counsel, its architects from the department of engineering, its enforcement officers from the police department, and its plans from the planning commission, particularly if one or more of these departments regards public housing as a nuisance and passing fad. There are also accountants who think that the only reason for the running of a government is the keeping of the books! (p. 24).

With regard to organizing by persons served, one difficulty is found

in the impossibility of applying the principle...to all of the work of a government, without encountering extensive conflict and duplication. It is not difficult to pick out special groups like the aged, the youth, the criminal, the veteran, the real estate owner, etc., but when all is said and done there remains a great number of the ordinary citizens that does not fall into *any single* grouping. Each individual will appear in various groups at various times, and in the general group known as 'the public' the rest of the time. And it is clearly impossible to organize a special department for the public, with all of the heterogeneous elements which this would entail from the standpoint of dissimilar technologies and conflicting objectives (p. 26).

From this general line of analysis Gulick concluded that no one way of grouping work activities in terms of homogeneity was clearly superior to the others: 'Students of administration have long sought a single principle of effective departmentalization just as alchemists sought the philosophers' stone. But they have sought in vain. There is apparently no one most effective system of departmentalization' (p. 31). In fact, it appeared difficult to organize work on complex problems without employing *all four* methods:

Each of the four basic systems of organization is intimately related with the other three, because in any enterprise all four elements are present in the doing of the work and are embodied in every individual workman. Each member of the enterprise is working for some major purpose, uses some process, deals with some persons, and serves or works at some place (p. 31).



This observation had direct implications for organizational design:

If an organization is erected about any of these four characteristics of work, it becomes immediately necessary to recognize the other characteristics in constructing the secondary and tertiary divisions of the work. For example, a government which is first divided on the basis of place will, in each geographical department, find it necessary to divide by purpose, by process, by clientele, or even again by place... (pp. 31-2).

But even here, no general rule seemed to exist for determining the sequential priority of each of the four methods:

While the first or primary division of any enterprise is of very great significance, it must none the less be said that there is no one most effective pattern for determining the priority and order for the introduction of these interdependent principles. It will depend in any case upon the results which are desired at a given time and place (p. 32).

And because different methods of departmentalization may be appropriate at different stages of an organization's life, 'it will therefore be found that not all of the activities of any government may be appropriately departmentalized neatly on the basis of a single universal plan' (p. 32).

#### **The nature of the co-ordination task**

Gulick also discussed the job of the chief executive. Here he coined the acronym 'POSDCORB' to refer to the Planning, Organizing, Staffing, Directing, Co-ordinating, Reporting, and Budgeting activities. It is unfortunate that POSDCORB has come to be a symbol of Gulick's essay since his discussion here (pp. 12-15) is one of the least interesting parts of his essay; for a concurring view see Denhardt (1984, p. 61). In fact, Gulick attributes the essentials of this discussion to Fayol (1916).

More useful observations about the executive's role are to be found in his discussion of the executive's co-ordination task, given different methods of departmentalization. If the departments are set up on the basis of process, he notes that the chief executive will have to co-ordinate the various processes; if geography is the basis of departmentalization, the chief executive will have to make sure that local activities support national policies. In sum, as Gulick put it,

each of the four principles of departmentalization plays a different role in co-ordination. In each case the highest degree of co-ordination takes place within the departments set up, and the greatest lack of co-ordination and danger of friction occurs between the departments, or at the points where they overlap (p. 33).

If multiple methods of departmentalization are used, the co-ordinating tasks of the executive become quite complex:

If the work of the government be departmentalized in part on the basis of purpose, in part on the basis of process, in part on the basis of clientele, and in part on the basis of place, it will be seen that the problems of co-ordination and smooth operation are multiplied and that the task of the executive is increased (p. 34).

The nature of the executive's task of co-ordination at the upper levels of the organization is thus a function of the methods of departmentalization used lower down. Gulick further recognized that this task of co-ordination might entail conflict resolution:

If trouble develops between a field representative (X) of one department and the field representative (A) of another department, . . . the solution will be found by carrying the matter up the line from inferior to superior until the complaint of Mr. X and the complaint of Mr. A finally reach their common superior, be he mayor, governor or President (pp. 35-6).

Gulick did note that means of co-ordination other than resort to hierarchy existed. Devices such as planning boards and interdepartmental committees are 'essential', especially when 'matters of policy' are involved or when 'abnormal situations' occur. Co-ordination of this type 'greatly lessens the military stiffness and red tape of the strictly hierarchical structure' and it 'greatly increases the consultative process in administration' (p. 36). Gulick argued, however, that such co-ordinating devices should not be used in discharging 'regular work' since they are 'too dilatory, irresponsible and time-consuming for normal administration' (p. 36).

### Co-ordination by ideas

Gulick clearly felt uncomfortable with these co-ordinating devices, as useful as he admitted they could be. In fact, he argued that *no* set of structural devices was adequate to the task of co-ordinating work in a large and complex organization. Early in the essay he had suggested that co-ordination could be achieved not only by the organization of a structure of authority but also by 'the dominance of an idea' (p. 6). Later in the essay he returned to this theme, remarking that co-ordination of work required a dominant idea as much as it did a structure of authority:

Any large and complicated enterprise would be incapable of effective operation if reliance for co-ordination were placed in organization alone. Organization is necessary; in a large enterprise it is essential, but it does not take the place of a dominant central idea as the foundation of action and self-co-ordination in the daily operation of all of the parts of the enterprise (p. 37).

Co-ordination in this way was not easy: 'The more important and more difficult part of co-ordination is to be sought not through systems of authority, but through ideas and persuasion . . .' (p. 39). But the outcomes of this means of co-ordination were nonetheless more desirable: 'The absurdities of the hierarchical system are made sweet and reasonable through unity of purpose.'

### Summary

On the face of it, Gulick's discussion of organizational structure seems a reasonable one. It treated features of organization which one might plausibly regard as important. It handled these features in a cautious, undogmatic way. Gulick pointed out that the various 'principles' interact in a complex and partially antagonistic manner; it was for this reason, I believe, that he carefully qualified many of his

assertions. The question remains, nonetheless, whether his approach has major weaknesses. For an answer we may turn to the critique by Herbert Simon.

### III. HERBERT SIMON ON THE PROVERBS OF ADMINISTRATION

In 1946 Herbert Simon published 'The Proverbs of Administration.' (See also Simon 1947, chapter 2. All page references are to this latter source.) Despite his essay's great impact, I will argue that it has two major deficiencies. First, a point-by-point comparison of the Simon and Gulick essays will suggest that Gulick was aware of most of the problems which Simon criticized the principles of administration theorists for ignoring. Second, a careful reading of Gulick's essay will likewise suggest that he had intelligent suggestions for handling the problems of organizational design implicitly raised by Simon.

#### **Contradictory principles of administration**

Simon's most basic argument, the one for which his essay is best known, is that the principles of administration are contradictory:

It is a fatal defect of the current principles of administration that, like proverbs, they occur in pairs. For almost every principle one can find an equally plausible and acceptable contradictory principle. Although the two principles of the pair will lead to exactly opposite organizational recommendations, there is nothing in the theory to indicate which is the proper one to apply (p. 20).

Simon focused his attack on the following four principles:

1. Administrative efficiency is increased by a specialization of the task among the group.
2. Administrative efficiency is increased by arranging the members of the group in a determinate hierarchy of authority.
3. Administrative efficiency is increased by limiting the span of control at any point in the hierarchy to a small number.
4. Administrative efficiency is increased by grouping the workers, for purposes of control, according to (a) purpose, (b) process, (c) clientele, or (d) place (pp. 20-1).

#### **Specialization**

Regarding the principle that specialization leads to administrative efficiency, Simon asked, 'Is this intended to mean that *any* increase in specialization will increase efficiency?' (p. 21). To illustrate he gave two examples of different administrative arrangements for a nursing unit in schools. Each provided specialization in nursing, one specialization by place and another specialization by function. He then argued that the 'principle of specialization is of no help at all in choosing between the two alternatives.' He suggested instead that

the real problem of administration, then, is not to 'specialize,' but to specialize in that particular manner, and along those particular lines, which will lead to administrative efficiency. But, in thus rephrasing this 'principle' of administration, there has been brought clearly into the open its fundamental ambiguity:

'Administrative efficiency is increased by a specialization of the task among the group in the direction that will lead to greater efficiency' (p. 22).

Even a cursory glance at Gulick's essay, however, demonstrates that Gulick was not so naïve. His discussion of specialization quite explicitly emphasized the test of experience and common sense. In a section entitled 'The Limits of Division' pp. 4–5), for example, Gulick described the efficiencies that the division of labour allowed in the making of shoes (a discussion of which Adam Smith and his pin-makers would have been proud) and noted that the nature of particular divisions of labour 'is essentially pragmatic. . . ' (p. 4). He stated that 'there are three clear limitations beyond which the division of work cannot to advantage go'. Here he referred to the volume of work to be done, the technology and custom used at a given time in a given workplace, and the fact that the subdivision of work cannot

pass beyond physical division into organic division. It might seem far more efficient to have the front half of the cow in the pasture grazing and the rear half in the barn being milked all of the time, but this organic division would fail. Similarly there is no gain from splitting a single movement or gesture like licking an envelope, or tearing apart a series of intimately and intricately related activities (p. 5).

Then, anticipating Simon's concern about circular reasoning, Gulick concluded,

It may be said that there is in this an element of reasoning in a circle; that the test here applied as to whether an activity is organic or not is whether it is divisible or not – which is what we set out to define. This charge is true. It must be a pragmatic test. Does the division work out? Is something vital destroyed and lost? Does it bleed? (p. 5).

Not only were there limits to specialization, but Gulick pointed out that increasing specialization also increased the need for co-ordination: 'It is self-evident that the more the work is subdivided, the greater is the danger of confusion, and the greater is the need of overall supervision and co-ordination' (p. 6). Such co-ordination was costly, he continued: 'It must be won by intelligent, vigorous, persistent and organized effort.'

In sum, through his brief discussion of the limits of division, Gulick's test of specialization is not one of principle but one of practice and experience, which is exactly what Simon was urging.

### **The unity of command**

Simon next focused on the principle of unity of command. In this section Simon raised some issues which involve us in a relatively lengthy and complex analysis. Gulick's discussion of the unity of command is undoubtedly too brief and undeveloped, so I must try to construct an argument about the role of unity of command which follows the spirit of his analysis. In this light his position may appear somewhat more reasonable than Simon makes it out to be.

Simon began by pointing out that there were several different meanings of the phrase 'unity of command'. In the strictest sense, he pointed out, violating the

unity of command is impossible: one man cannot possibly obey two contradictory commands. The unity of command must mean something more than this.

A second meaning closely followed Gulick's usage – it is undesirable to put an employee in a position where he receives orders from more than one superior – and Simon here quoted much of Gulick's own short discussion of the matter. But this version, argued Simon, is incompatible with the principle of specialization. When an official makes a decision, he may need decision premises from several different fields of expertise in order to do his job well. But some of those premises may need to come from experts who are not in the chain of command between our official and the chief executive.

Simon here gives as an example an accountant in a school department who is supervised by an educator. The accountant may need instruction on technical aspects of his job, but his supervisor, being an educator, does not have the required expertise in accounting. Officials in the finance department could help, but due to the unity of command they would not be allowed to give the accountant orders on accounting procedure. The accounting department would have to persuade the school superintendent to give the proper orders to the accountant's supervisor, who would then transmit the orders to the accountant. Simon summarizes his point with the following commentary:

Gulick... clearly indicates the difficulties to be faced if unity of command is not observed. A certain amount of irresponsibility and confusion is almost certain to ensue. But perhaps this is not too great a price to pay for the increased expertise that can be applied to decisions. What is needed to decide the issue is a principle of administration that will enable one to weigh the relative advantages of the two courses of action. But neither the principle of unity of command nor the principle of specialization is helpful in adjudicating the controversy. They merely contradict each other without indicating any procedure for resolving the contradiction (p. 24).

Simon then introduces a third possible interpretation of 'unity of command'. Perhaps it means: 'In case two authoritative commands conflict, there should be a single determinate person whom the subordinate is expected to obey; and the sanctions of authority should be applied against the subordinate only to enforce his obedience to that one person' (p. 25). Nonetheless, Simon pointed out, 'except for settling conflicts of authority' (p. 25), a single hierarchy of authority is not needed. And even this concept of unity of command conflicts with the principle of specialization since the person who settles the conflict may not be a specialist in the matter which he must adjudicate.

In general, then, Simon suggests that if the benefits of increased expertise which can be brought to bear on a problem through specialization are greater than the costs of violating the unity of command, then violating the principle may be a reasonable tradeoff. And he argues that 'what evidence there is of actual administrative practice would seem to indicate that the need for specialization is to a very large degree given priority over the need for unity of command' (p. 25). 'As a matter of fact', he continued,

it does not go too far to say that unity of command, in Gulick's sense, never has existed in any administrative organization. If a line officer accepts the regulations of an accounting department with regard to the procedure for making requisitions, can it be said that, in this sphere, he is not subject to the authority of the accounting department?

How valid are Simon's arguments about the unity of command? I will suggest that Gulick's essay reveals a deeper understanding of these aspects of organizational design than Simon appears to have recognized.

Simon was correct in arguing that the principle of unity of command conflicts with the principle of specialization, and he expressed a legitimate concern that expertise be recognized in decision-making. But the implications of his points are not as obvious as they might seem. The reason is that there is a further incompatibility which Simon does not discuss: the principle of specialization is inconsistent not just with the unity of command but also, in an important sense, with itself. The boundaries of one field of specialization often overlap those of another. As a result, the claims, advice, and premises for decision advanced by one expert often conflict with those of another. These conflicts will exist, moreover, even if the unity of command is abandoned, indeed even if a hierarchy of authority vanishes altogether.

The frequency and importance of conflicting orders from specialists will depend on a number of factors, such as the extent to which the various aspects of our worker's task can be conducted independently of each other. Whenever there is interdependence among the aspects of a task, conflict among experts giving orders about this task is possible. In his 1950 text Simon himself argued that

In any complex task there are numerous opportunities for difference of opinion as to the precise objective to be accomplished, and – even more important – as to the best method for accomplishing it. Often there are several courses of action open, each of which would be reasonably effective, but the needs of co-ordination may require that the *same* course be adopted by the entire organization. In such circumstances, the organization members may be perfectly satisfied to have the issue in dispute settled before a common court of appeal – the hierarchical superior (p. 212).

Even if there are no 'legitimate' grounds for conflict among experts, Gulick knew there were other grounds for conflict; as he described the matter in a delightful passage,

Another trait of the expert is his tendency to assume knowledge and authority in fields in which he has no competence. In this particular, educators, lawyers, priests, admirals, doctors, scientists, engineers, accountants, merchants and bankers are all the same – having achieved technical competence or 'success' in one field, they come to think this competence is a general quality detachable from the field and inherent in themselves. They step without embarrassment into other areas. They do not remember that the robes of authority of one kingdom confer no sovereignty in another; but that there they are merely a masquerade (pp. 10–11).

If there is no interdependence among the aspects of our worker's task, then specialization can without great cost take precedence over the unity of command. Indeed, the unity of command would be irrelevant: without interdependence, orders from different experts would never conflict. Without interdependence and the resulting conflicts, in fact, one cannot imagine why the principles of administration theorists would have been so exercised about the unity of command.

However, it would seem that Gulick thought such conflicts were rather likely, as suggested by his comments about the likelihood of duplication and overlap, the need for executive co-ordination, and so forth. Hence we might draw the conclusion that it is the existence of interdependence, and the conflicts among experts which could be expected to ensue, which led Gulick to consider structural devices for avoiding or mitigating these conflicts.

When there are rival claims of expertise, resolution will be achieved either by compromise among the experts or by referral of the conflict to someone who is not likely to be an expert in all relevant fields. For organizations this conflict resolver will usually be a hierarchical superior of those in conflict; as Gulick noted with conflicts between the field representatives of two different departments, 'the solution will be found by carrying the matter up the line... until the complaint of Mr. X and the complaint of Mr. A finally reach their common superior' (pp. 35-6). Simon emphasized this point in his 1950 text, arguing that

It is difficult to overemphasize this coordinating role of the hierarchy. Without a common hierarchical superior, or with a common superior at levels too distant to be appealed to except in acute emergency, administrative units may engage in fratricidal strife that can halt effective work... [T]he absence of a common hierarchical superior between a budget estimates officer or a personnel classification officer, on the one hand, and a branch or section chief in a 'line' agency on the other, often impedes the amicable settlement of disputes between them, and leads to protracted, and sometimes ill-tempered, bargaining and power tactics (p. 213).

If a function of superiors is to resolve conflicts among subordinates, there may be some virtue in resolving the conflicts in a uniform and consistent manner. A hierarchy of authority following the unity of command in Simon's third sense might serve this end. But as Simon himself made clear, requiring conflicts to be settled at higher levels *after* they have arisen can slow down and sometimes completely halt the ongoing conduct of work. Hence there may also be some virtue, Gulick might have argued, in attempting to *forestall* some of the conflicts by having the experts' orders to the worker 'cleared', in some sense, through the worker's formal superiors. This implies unity of command in Simon's second sense.

As I have noted, however, we should not overemphasize Gulick's adherence to purely structural solutions to co-ordination problems: he felt that every authority structure had its limits in achieving the goals of the organization. Gulick had discussed the 'essential' role that different kinds of co-ordinating committees could play; co-ordination of this type lessens the 'military stiffness' and 'red tape' of the strictly hierarchical structure. But at the same time Gulick appreciated the problems

involved in making these co-ordinating devices work. He noted the 'danger of introducing confusion in direction through the violation of the principle of unity of command . . .' (p. 37). This was not just an abstract concern. When an inter-departmental committee makes a decision, the question will arise as to whether some field official should take direction from the committee or from the department employing him. Since the authority of such a committee is ambiguous, what the field official should do is often a matter of dispute among the organizations involved. Short of calling in the chief executive on each such occasion, such conflicts can drag on interminably.

Gulick thus concluded that co-ordinating committees could not always be trusted to settle the problems of co-ordination. It was at this point that he proposed 'Co-ordination by Ideas' as opposed to 'Co-ordination Through Organization' (p. 6). He explicitly noted that 'the power of an idea to serve as the foundation of co-ordination is so great that one may observe many examples of co-ordination even in the absence of any single leader or of any framework of authority' (p. 38). The executive's power to hire and fire, commonly thought necessary to enforce the chain of command, was increasingly restricted. 'It becomes increasingly clear . . .' he went on to say, 'that the task of the administrator must be accomplished less and less by coercion and discipline and more and more by persuasion. In other words, management of the future must look more to leadership and less to authority as the primary means of co-ordination' (p. 39).

With these arguments about the essential role of the dominance of an idea Gulick might be seen as laying the foundation for such fuller studies as Barnard's 1938 *The Functions of the Executive* (see p. 87: 'The inculcation of belief in the real existence of a common purpose is an essential executive function') and Selznick's 1957 *Leadership in Administration*. (Neither Barnard nor Selznick cites Gulick's 1937 essay.) More recent popular studies like Peters and Waterman's *In Search of Excellence* (1982), with its discussion of the importance of 'corporate culture,' have also emphasized Gulick's essential point.

In sum, Simon was right that unity of command conflicts with specialization. But since specialization also conflicts with specialization, simply giving the nod to the principle of specialization over the unity of command, as Simon seemed to prefer, does not necessarily solve the problems that Simon himself raised. At least Gulick was aware of the conflicts and argued that no structural device was entirely adequate to their resolution (see also Mintzberg 1979, pp. 168-75).

With this perspective on the role of conflict between experts and the role of hierarchical authority in settling these conflicts, we can now look with somewhat better understanding at another of Simon's comments about the unity of command. Of particular importance is his claim that 'what evidence there is of actual administrative practice would seem to indicate that the need for specialization is to a very large degree given priority over the need for unity of command' (p. 25). If Simon is correct here, the preceding discussion of interdependence, conflict, and the conflict-resolving role of the authority structure is largely irrelevant.

However, what Simon's 'evidence' for his observation consists of is not made clear. While Simon (pp. 24-5) specifically accused Gulick of using only 'loose



heuristic arguments' in supporting the unity of command, close examination of Simon's text suggests that he uses arguments which are little different. I have already quoted what he says in support of his point:

As a matter of fact, it does not go too far to say that unity of command, in Gulick's sense, never has existed in any administrative organization. If a line officer accepts the regulations of an accounting department with regard to the procedure for making requisitions, can it be said that, in this sphere, he is not subject to the authority of the accounting department? (p. 25).

But in fact it is *not* clear on what grounds the line officer is doing what the accounting department is telling him. Simon had previously defined 'authority' in the following manner: 'A subordinate may be said to accept authority whenever he permits his behavior to be guided by a decision reached by another, irrespective of his own judgment as to the merits of that decision' (p. 22). Consider two prototypically different kinds of situations which might arise.

In the first situation, the line officer requests assistance from the accounting department in order to complete a task. The line officer may be quite willing to accept the advice because he accepts accountants as the relevant experts on some particular aspect of his task. But it is not obvious that accepting advice in this fashion should be considered a violation of the unity of command since no 'command' is being issued by the accounting department. It remains up to the line officer as to whether he is going to follow the advice or not.

In the second kind of situation, the accounting department orders the line officer to conduct his task in some particular way. Assume the line officer objects to the accounting department's order, or that accounting's order conflicts with the orders of other departments which also have an interest in his work, or that accounting's order hinders his ability to do his job well (as Gulick had noted, 'There are . . . accountants who think that the only reason for the running of a government is the keeping of books!' (p. 24)). The line officer might then appeal the order to some common superior. Assume he loses his appeal. The consequence is that he ends up doing what the accounting department tells him to do, but not because he views the department as expert or authoritative and not because the department has any powers of coercion over him. He is doing it because some superior, who is in his chain of command (and who can punish him in a variety of ways), is telling him to follow the accounting department's advice. It is not clear, then, that we should so readily agree with Simon's confident assertion that the line officer is accepting the accounting department's authority, and that the unity of command is thereby being violated.

My final point about the unity of command is an historical one, involving the Gulick and Simon references to the work of Taylor. Gulick had criticized Taylor's recommendation of 'functional foremanship,' that is, the assigning of multiple supervisors over some worker, each supervisor being an expert in some aspect of the worker's job. The problem for Gulick was that functional foremanship violated the unity of command, while Simon had cited Taylor as one who, like himself, was particularly concerned about expertise. However, neither Gulick nor Simon had

an adequate understanding of Taylor's recommendations, for it turns out that conflict and its resolution was something to which Taylor had given some thought.

Taylor was aware of the potential for conflict among the orders given to a particular worker by the functional foremen, and he gave a hierarchy of authority a role in settling such disputes. As discussed in *Shop Management* (1911), there were to be eight types of foremen, each overseeing a particular feature of the machinist's work, such as tool and work preparation (under the 'gang boss'), speed of work ('speed boss'), quality control ('inspector'), and machine repair ('repair boss'). Each type of foreman reported to an 'over-foreman'; all the speed bosses in a large shop, for example, should have a 'speed foreman' over them to train them and back them up. Above the over-foremen was the assistant superintendent of the shop. Taylor knew that with an individual worker receiving instructions from as many as eight functional foremen, conflicts in instructions were likely to arise:

The speed boss, for instance, always follows after the gang boss on any particular job in taking charge of the workmen. In this way their respective duties come in contact edgewise, as it were, for a short time, and at the start there is sure to be more or less friction between the two. If two of these bosses meet with a difficulty which they cannot settle, they send for their respective over-foremen, who are usually able to straighten it out. In case the latter are unable to agree on the remedy, the case is referred by them to the assistant superintendent, whose duties, for a certain time at least, may consist largely in arbitrating such difficulties and thus establishing the unwritten code of laws by which the shop is governed (pp. 108–9).

Thus while Taylor was violating the unity of command at the machinist's level, he nonetheless saw the need for some hierarchy of authority to resolve the 'friction' he thought sure to arise. His discussion, it would appear, is neither entirely supportive of Simon nor entirely incompatible with Gulick.

### Span of control

Simon next focused on the 'span of control' concept. He stated that the notion that the span of control should be narrow – 'say six' – is 'a third incontrovertible principle of administration' (p. 26). But, he also suggested, there is a contradictory principle of administration: 'Administrative efficiency is enhanced by keeping at a minimum the number of organizational levels through which a matter must pass before it is acted upon' (p. 26). His point, of course, is that the narrower are the managers' spans of control, the greater must be the number of levels to the organization, while the broader their span of control, the more difficult it will be to supervise their subordinates.

If we are concerned with the integrity of Gulick's essay – recall that Simon was not focusing exclusively on Gulick – there are two responses. The first is that Gulick makes no assertion at all that the span of control should be set at a value of six or any other fixed number. He explicitly stated that it is not known what the span of control should be: 'We enter a realm of experience which has not been brought under sufficient scientific study to furnish a final answer' (p. 8). It seemed likely

that the proper span depended on the variables of diversification of function, time, and space. In fact, he stated that

the failure to attach sufficient importance to these variables has served to limit the scientific validity of the statements which have been made that one man can supervise but three, or five, or eight, or twelve immediate subordinates. These considerations do not, however, dispose of the problem. They indicate rather the need for further research (p. 9).

The second response is that at no point in his essay does Gulick mention the principle that the number of organizational levels should be kept to a minimum. He certainly had an opportunity to assert this principle when he talked about designing an organization by working from the top down, using the unity of command, and working from the bottom up, using the homogeneity of work groups. His discussion of the need to reconcile the principles of span of control and the homogeneity of work groups was well-suited to talking about limiting the 'height' of the organization. But nowhere did he mention any such concern. To assert the importance of any particular principle is to make a judgment about its importance in the real world. We can plausibly conclude that, in Gulick's experience, it was a factor of lesser importance.

In fact, a similar page-by-page inspection of the other major principles of administration studies cited by Simon – Urwick (1945), White (1939), and the other works in *Papers* – reveals no mention whatsoever of Simon's principle of limiting the height of the hierarchy. While Simon argues that this principle, while 'not so familiar as the principle of span of control, can be supported by arguments of equal plausibility' (p. 26), the fact remains that it is Simon who is asserting the importance of this principle and not the theorists he criticizes.

### **Organization by purpose, process, clientele, place**

In the following section Simon attacked the principles of administration theorists for advocating incompatible modes of specialization:

Administrative efficiency is supposed to be increased by grouping workers according to (a) purpose, (b) process, (c) clientele, or (d) place. But from the discussion of specialization it is clear that this principle is internally inconsistent; for purpose, process, clientele, and place are competing bases of organization, and at any given point of division the advantages of three must be sacrificed to secure the advantages of the fourth (p. 28).

Simon gave an example of a city government's departments being based on major purpose; he then pointed out that the 'advantages of organization by process will thereby be partly lost' (p. 29). 'Some of these advantages', he continued, 'can be regained by organizing on the basis of process *within* the major departments.' Nonetheless, 'these major types of specialization cannot be simultaneously achieved, for at any point in the organization it must be decided whether specialization at the next level will be accomplished by distinction of major purpose, major process, clientele, or area' (p. 29).

Of course, Gulick could not have been more persuasive on precisely these points.

A third of his essay was devoted to a discussion of the complex relationships among these competing and incompatible bases for organization. One of Simon's most fundamental criticisms of the 'principles' theorists was that when two principles conflict, the 'principles' theorists give no guidance in assessing the costs and benefits of adhering to one or the other. Yet though Gulick extensively discusses the costs and benefits of organizing in each of the four different ways, Simon almost completely ignores this discussion (except for a brief note five pages later in a different section). And in fact, an interesting discussion of the design of organizational structures in Simon's own public administration text of 1950 (pp. 264-6) took place largely in terms of Gulick's style of analysis. The basic issue was whether the post-WWII Foreign Economic Administration, which funnelled American aid to needy countries around the world, should be structured on the basis of geography or on the basis of the commodities (e.g., bread grains, iron and steel) being dispensed. Gulick would have found Simon's analysis quite congenial.

### Ambiguities in key terms

Simon then argued that there are great difficulties in specifying exactly what key terms like 'purpose,' 'process,' 'clientele,' and 'place' might mean. Reflection on his argument, however, suggests that Simon, while not being wrong, was making a point which does only minor damage to Gulick.

To Simon, a 'purpose' is an 'objective or end' (p. 30) for which an activity is carried out, while a 'process' is a means of accomplishing the purpose. Purpose, he continued, 'may generally be arranged in some sort of hierarchy.' Here he gave an example of a typist moving fingers in order to type, typing in order to reproduce a letter, reproducing a letter in order to answer an inquiry, and so forth: 'It follows that the same activity may be described as purpose or as process' (p. 30).

Simon then quoted Gulick to the effect that 'Organization by major purpose serves to bring together in a single large department all of those who are at work endeavoring to render a particular service.' But here Simon raised an important point:

there is no such thing as a purpose, or a *unifunctional* (single-purpose) organization. What is to be considered as a single function depends entirely on language and techniques. If the English language has a comprehensive term which covers both of two sub-purposes it is natural to think of the two together as a single purpose. If such a term is lacking, the two sub-purposes become purposes in their own right. On the other hand, a single activity may contribute to several objectives; but since they are technically (procedurally) inseparable the activity is considered as a single function or purpose (p. 31).

Simon's conclusion was that

There is, then, no essential difference between a 'purpose' and a 'process', but only a distinction of degree. A 'process' is an activity whose immediate purpose is at a low level in the hierarchy of means and ends, while a 'purpose' is a collection of activities whose orienting value or aim is at a high level in the means-end hierarchy (p. 32).

Simon conducted a similar analysis of 'clientele' and 'place' as bases of organization. His point was that

these categories are not really separate from purpose, but a part of it. A complete statement of the purpose of a fire department would have to include the area served by it; 'to reduce fire losses on property in the city of X'. Objectives of an administrative organization are phrased in terms of a service to be provided and an area for which it is provided. Usually, the term 'purpose' is meant to refer only to the first element; but the second is just as legitimately an aspect of purpose (p. 32).

Several responses to Simon are necessary here. First, when Simon complained that there is no such thing as a purpose, or unifunctional organization, we might simply recall once again Gulick's comment about the 'impossibility of cleanly dividing all the work of any government into a few such major purposes which do not overlap extensively' (p. 22).

Second, Simon's distinction between 'purpose' and 'process' as simply lying at different points in a means-end chain in the organization does not in any sense imply that organizing in these different ways – around activities lying low in the chain versus activities standing high in the chain – is unimportant. In their 1950 text, Simon *et al.* argued that 'the ambiguity of classification [of activities] and the fact that it sets up conflicting criteria for grouping activities seriously limit its usefulness' (p. 153). But they proceed to acknowledge that 'the principle insight we gain from it is that any organizational task can be divided in a number of different ways and that by dividing it in one particular way certain consequences ensue which are different from the consequences that follow on another division of work.' Of course this was precisely Gulick's point: dividing work in a particular way has consequences which are different from those which follow from another way of dividing work.

Perhaps the issue that Simon raised can be better understood if we draw a distinction between the *act of organizing* an agency and the particular *method of departmentalization* used in the agency's organization. On the one hand, given some individual who was designing an agency, it may be possible to determine on what basis he was designing the structure. To use some of Simon's own language, the designer may have 'decision premises' involving, for example, designing on the basis of 'process' (i.e. on the basis of activities lying low in Simon's means-ends chain) or designing on the basis of 'purpose'. The only ambiguity involves whether we can adequately discover just what the designer's decision premises were. Since the section of Gulick's essay under discussion was an exercise in design, it is not obvious why there is any intrinsic ambiguity to his discussion.

On the other hand, if we are not privy to the decision premises that were used, it may well be difficult to look at the structure and determine whether it was based on premises related to 'process' or premises related to 'purpose.' It is in this sense that there is likely to be ambiguity; in general, working backward from some decision to what the premises 'must have been' is a tricky (and often impossible) exercise.

Nonetheless, the importance of this point for Gulick's discussion of methods of departmentalization remains limited. Consider any concrete example of an organizational structure: in a city government it is easy to see whether the engineers have all been clustered together in one unit and the lawyers all in another, or whether the engineers and lawyers have been grouped together in offices scattered around the city. These are two obviously different forms of organization, whatever the original rationale was for grouping them in this way. Gulick's argument that the various forms *matter* for the conduct of the organization's business, and in ways about which intelligent observations can be made, stands virtually untouched. We may not be able to tell whether the latter form is in fact a geography-based structure or a clientele-based structure – Gulick's labels may indeed be ambiguous here. But their empirical referent is not.

At any rate, Simon undermines some of his own case about ambiguity when he appears to suggest (pp. 32–3) that it is possible to cleanse and clarify the language used by the principles of administration theorists. If he is correct, then it should be a simple matter to rewrite Gulick's comparisons of organizations based on 'purpose,' 'process,' 'clientele,' and 'place' using Simon's more precise terminology. Gulick's essential points, however, would not need revision.

#### **Lack of criteria for specialization**

Simon's next criticism is easily handled. He stated: 'Even when the problem is solved of proper usage for the terms "purpose," "process," "clientele," and "area," the principles of administration give no guide as to which of these four competing bases of specialization is applicable to any particular situation' (p. 33). Strictly speaking, Simon is correct in stating that the *principles* give no guidance here; Gulick would not have argued otherwise. But what guidance is needed Gulick attempted to supply in his 16-page discussion on the costs and benefits of each of the four bases of specialization.

Simon further argued, however, that one cannot know in the abstract how work is actually going to be conducted when organized on the basis of one or another of the principles. For example, he labelled as a 'remarkable' illustration of 'illogic' the following quote from a 1925 article:

For instance, where should agricultural education come: in the Ministry of Education, or of Agriculture? That depends on whether we want to see the best farming taught, though possibly by old methods, or a possibly out-of-date style of farming, taught in the most modern and compelling manner. The question answers itself (p. 34).

Simon's response was pointed: 'Does the question really answer itself?' Suppose, he suggested, that a bureau of agricultural education was created in the Ministry of Education and staffed by a man who had 'extensive experience in agricultural research or as administrator of an agricultural school.' Simon then asked,

What reason is there to believe that if attached to a Ministry of Education they would teach old-fashioned farming by new-fashioned methods, while if attached to a Ministry of Agriculture, they would teach new-fashioned farming by

old-fashioned methods? . . . The question answers itself' only if one has a rather mystical faith in the potency of bureau shuffling as a means of redirecting the activities of an agency (p. 35).

Far from being remarkably illogical, however, a reasonable hypothesis can be formulated that this 'bureau shuffling' would, in the long run, affect the kind of education. Indeed, the hypothesis could be based on grounds Simon himself has supplied. One might reasonably suspect that the decision premises supplied by the heads of these two ministries to the person in charge of agricultural education would differ quite markedly and would, over time, rather considerably affect the character of the educational programme. It is no secret that the different professions – educators and agricultural researchers in this case – which can dominate different agencies often have different orientations toward their work and toward the world around them; the two ministries might also have very different environments. Each of these factors – ministerial leadership, professional cultures, and organizational environments – can be expected to shape the decision premises of the person in charge of agricultural education.

Simon may believe that the question does not answer itself, but some organizationally sensible guesses were being made in that 1925 article. That Gulick would agree with this point is suggested by his discussion of health activities in a department of education: 'Medical work with children when established under the department of education as a division is likely to receive less encouragement than it would if independently established in the health department, because after all the department of education is primarily interested in schools and has its own great needs and problems' (p. 22).

Simon ended this section by noting that

these contradictions and competitions have received increasing attention from students of administration during the past few years. For example, Gulick, Wallace, and Benson have stated certain advantages and disadvantages of the several modes of specialization, and have considered the conditions under which one or the other mode might best be adopted. All this analysis has been at a theoretical level – in the sense that data have not been employed to demonstrate the superior effectiveness claimed for the different models. But, though theoretical, the analysis has lacked a theory. Since no comprehensive framework has been constructed within which the discussion could take place, the analysis has tended either to the logical one-sidedness which characterizes the examples quoted above or to inconclusiveness (p. 35).

This passage contains one of Simon's few acknowledgements that others might have been aware of the complexities involved in organizing in one way or another. But even here, Simon simply did not further acknowledge that Gulick, for example, prefaced his discussion of the different bases of departmentalization with the explicit comment that 'Unfortunately we must rest our discussion primarily on limited observation and common sense, because little scientific research has been carried on in this field of administration' (p. 21). And in fact, it is amusing to note that Gulick approvingly cited, among other pieces (p. 33, fn. 20), a 1937 article

co-authored by one 'H. A. Simon' on efforts to develop 'measurements of administration.' Gulick was acutely aware of the need to expand the limited knowledge base that was available when he was writing.

As for lacking the 'comprehensive framework' that Simon wanted, Gulick's essay obviously discusses a number of key features of organizations – the division of labour, unity of command, homogeneity of work groups, different methods of departmentalization, the tasks of co-ordination and conflict resolution, and the dominance of an idea – which are arguably important. Gulick understood that these features were related to each other in complex and sometimes antagonistic – but nonetheless describable – ways. His essay contains a rich set of observations and hypotheses which can certainly serve as a guide to future research. And in a companion essay, 'Science, Values and Public Administration,' in the Gulick-Urwick volume, Gulick not only discussed more extensively the need for measurements and the development of statistical information about public administration, but he also pleaded for the development of the kind of theory for which Simon was asking; as Gulick framed his plea, 'And how may we encourage the imaginative approach, the formulation of generalizations, the statement of hypotheses, the building up and testing of theories?' (p. 195).

### **Can anything be salvaged?**

Given Simon's preceding arguments, it is remarkable to find him making the following concession as he brought his essay to a close: 'Can anything be salvaged which will be useful in the construction of an administrative theory? As a matter of fact, almost everything can be salvaged' (p. 35). He continued by noting that

the difficulty has arisen from treating as 'principles of administration' what are really only criteria for describing and diagnosing administrative situations...[U]nity of command, specialization by purpose, decentralization, all are items to be considered in the design of an efficient administrative organization. No single one of these items is of sufficient importance to suffice as a guiding principle for the administrative analyst. In the design of administration organizations, as in their operation, over-all efficiency must be the guiding criterion. Mutually incompatible advantages must be balanced against each other... (pp. 35–36).

Of course, any close reading of Gulick's essay will reveal that this is precisely the mode of analysis he was using. And while Gulick did not devote much attention to the guiding role of efficiency in 'Notes,' his 'Science, Values and Public Administration' essay argues that

in the science of administration, whether public or private, the basic 'good' is efficiency. The fundamental objective of the science of administration is the accomplishment of the work in hand with the least expenditure of man-power and materials. Efficiency is thus axiom number one in the value scale of administration (p. 192).

Simon's final point in this section was that:



A valid approach to the study of administration requires that *all* the relevant diagnostic criteria be identified; that each administrative situation be analyzed in terms of the entire set of criteria; and that research be instituted to determine how weights can be assigned to the several criteria when they are, as they usually will be, mutually incompatible (p. 36). (See also his discussion of weights on pp. 41–44.)

Simon himself later recanted these views on weights. While still regarding the principles of administration as 'essentially useless' he wrote in the Preface to the second edition of *Administrative Behavior* (1957, p. xxxiv) that

I no longer believe that this passage [on weights] is a particularly good description of the kind of empirical research that is needed in administration. Organizations are complex structures, and the importance of any particular factor in the design of such a structure will depend on many circumstances. Hence we can hardly hope for a set of invariant 'weights' to apply to the design problem.

Gulick, one might suspect, would have vigorously agreed.

#### IV. SIMON ON ADMINISTRATIVE RESEARCH

Simon ended his essay by sketching out his own suggestions for how administrative research should be conducted. Aside from Simon's discussion of the 'weights' to be given to the various organizing principles there is little in these pages with which Gulick would have disagreed. Particularly noteworthy is Simon's discussion – to my knowledge one of his first – of the role of limits to the quantity and quality of a person's work:

On one side, the individual is limited by those skills, habits, and reflexes which are no longer in the realm of the conscious. . . . On a second side, the individual is limited by his values and those conceptions of purpose which influence him in making his decisions. . . . On a third side, the individual is limited by the extent of his knowledge of things relevant to his job (p. 40).

Here began Simon's career-long investigation of the problem of bounded rationality. But even here we find Luther Gulick's footprints in the path that Simon was laying out for us. As already noted, Gulick had introduced his discussion of what executives do by remarking that

we are confronted at the start by the inexorable limits of human nature. Just as the hand of man can span only a limited number of notes on the piano, so the mind and will of man can span but a limited number of immediate managerial contacts. . . . The limit of control is partly a matter of the limits of knowledge, but even more is it a matter of the limits of time and energy. As a result the executive of any enterprise can personally direct only a few persons (p. 7).

Later he reiterated the point: 'It must be recognized that the chief executive of any enterprise has but a limited amount of time and energy at his command' (p. 35).

This was not just a fleeting concern of peculiar interest only for the span of control, for Gulick devoted an entire section to 'The Limits of Co-ordination'

(pp.39–41). In this section he discussed attempts by authoritarian states like Italy, Germany, and the Soviet Union to centrally direct and control their economies and societies. After describing, with chilling accuracy, the nature of regimes which attempt to co-ordinate centrally 'all of life' and to 'create absolute and universal consent and enthusiastic adherence to the program of the state' (p. 40), he drew the following conclusions:

It is clear also from the observation of these experiments, in which direction the limitations of co-ordination lie. The difficulties arise from:

1. The uncertainty of the future, not only as to natural phenomena like rain and crops, but even more as to the behavior of individuals and of peoples;
2. The lack of knowledge, experience, wisdom and character among leaders and their confused and conflicting ideals and objectives;
3. The lack of administrative skill and technique;
4. The vast number of variables involved and the incompleteness of human knowledge, particularly with regard to man and life;
5. The lack of orderly methods of developing, considering, perfecting and adopting new ideas and programs (p. 40).

Based on this diagnosis, his prognosis for these regimes was prescient:

The weak link in the chain is not the securing of popular support; it is rather in the field of policy and execution. It is at this point that the lack of a systematic method for bringing in new ideas, the corrective of free criticism, and the common man's appraisal of the end results may prove disastrous. Certainly a state which attempts the extraordinarily difficult task of co-ordinating most of life will need these sources of regeneration and correction even more than a state which undertakes a more limited responsibility (p. 41).

'If this analysis is sound,' he continued, 'the limits of co-ordination are to be found in lack of knowledge and lack of administrative skill' (p. 41).

It would be too much to claim that Gulick introduced the concept of 'bounded rationality' to organization theory, much less turn this concern into a lifelong programme of pioneering research. Yet Gulick appears to have foreseen its role. His brief discussion of national planning also highlights issues later probed in greater depth by scholars such as Hayek and Lindblom.

One last sidelight on bounded rationality and the principles of administration comes from Simon's more recent research on artificial intelligence and the nature of the rationality exhibited by experts in particular fields. If Simon had come to public administration from computer science and artificial intelligence, rather than the reverse, he might have been inclined to use the term 'heuristic' in a richer and less pejorative sense than when he accused Gulick of advancing 'loose heuristic arguments' (pp. 24–5).

In artificial intelligence, heuristics are treated as 'rules of thumb' – approximate rather than exact design rules – which give us guidance on how to think about and make trade-offs when we lack exact methods for finding the best design. One current area of research in artificial intelligence involves the development of 'expert systems' – computer programs which codify and systematize a human expert's

knowledge and intuitions about some complex problem domain. Heuristics play an important part in these programmes, leading the programme's user first down a path which involves the major trade-offs, then down a path involving a second-order set of less important trade-offs, and so forth. If the young computer scientist Simon had taken Gulick to be an 'expert' in the design of public organizations – after all, Gulick had had extensive practical experience with efforts to reorganize government agencies – Simon's (hypothetical) previous experience with the great difficulties of translating an expert's knowledge into an 'expert system' might have given him a greater appreciation for the richness of Gulick's understanding.

## V. CONCLUSION

Gulick's essay was not an intellectual dead-end. But how should we characterize it?

At the very least, Gulick's essay was an important transition between earlier administrative theorists and later scholars who, like Simon, urged a more empirical and analytic approach to the study of organizations. 'Notes on the Theory of Organization' does have elements of both traditions. Gulick used some of the older language, yet at the same time it appears that he was striving to understand the deeper implications of organizing the government's work in each of a variety of different ways. He certainly showed how the traditional concerns could be treated in a far more analytical fashion.

Nonetheless, portraying Gulick's essay as transitional is unsatisfactory since a case can be made that it is a work whose implications have yet to be fully explored. Instead of being merely transitional – useful at one time but now superseded – it may in fact have been ahead of its time. There are a number of reasons for this judgement.

First, Simon sharpened and clarified Gulick's discussion of the fact that the various aspects of administrative design are contradictory. But the larger point is that almost any list of features we might find desirable in a bureaucracy is internally contradictory: in general we want conflicting things. J. Q. Wilson (1967), for example, once remarked that

there is not one bureaucracy problem, there are several, and the solution to each is in some degree incompatible with the solution to every other. . . . Obviously the more a bureaucracy is responsive to its clients. . . the less it can be accountable to presidential directives. Similarly, the more equity, the less responsiveness. And a preoccupation with fiscal integrity can make the kind of program budgeting required by enthusiasts of efficiency difficult, if not impossible (p. 4).

More theoretically, Hammond and Miller (1985) demonstrate, via a theorem from axiomatic social choice theory, that such conflicts among desirable principles, including such fundamental principles as authority and expertise, are almost unavoidable. And as I argued in my discussion of unity of command, respect for expertise as a design principle can be shown to be in conflict even with itself (see also Hammond and Miller 1985, pp. 18–22). The choice that an organization designer must therefore face is the choice of what kinds of costs – what 'pathologies,'

as an organizational sociologist might put it – are to be tolerated. It is interesting to note that Gulick's discussion of the 'dominance of an idea' as a means of co-ordination is *precisely* one possible 'solution' to this fundamental and very troubling theorem about social choice in organizations. Similarly, when choosing a method of departmentalization, one must compare the costs and benefits of the competing methods, just as Gulick described.

That there were conflicts among the 'principles' which Gulick discussed should thus not be seen as a logical failing on his part but an integral and unavoidable feature of the problem of organizational design. By addressing the issue in such a way that our ultimate impression was that Gulick and other theorists were being illogical and contradictory, Simon may have (perhaps unintentionally) deflected students of administration away from further investigation of the properties of organizational structures. Indeed, perhaps it is time to resurrect not only Gulick's essay but also a kind of 'principles of administration' approach itself. Gulick and Simon gave us the background, and the Hammond and Miller (1985) article provides an illustration of how this might be done.

Second, Gulick's style of discussion of the implications of, and the relationships among, organizing by purpose, process, persons, or place (or by whatever labelling system Simon would have us use) has in large measure been adopted and extended by more recent works such as Thompson (1967, pp. 57–65) and Mintzberg (1979, ch. 7). Gulick had stressed the importance of the *sequence* in which the different aspects of work are recognized in the structure. It turns out that an organization's structure can be interpreted as the organization's 'agenda,' that is, as the sequence in which particular decision alternatives are compared to each other in the organizational decision-making process. An important literature has developed in recent years on the impact of agendas on the outcomes of committee meetings. Gulick's approach has a rather close conceptual linkage with this literature. The article which stimulated my essay here (Hammond 1986), explores this theme by illustrating the ways in which organizational structures based on Gulick's different methods of departmentalization can affect organizational decisions. Indeed, a theorem in Hammond and Thomas (1989) proves mathematically, for a broad range of possible hierarchical forms, that it is impossible to design a structure which does not affect outcomes. This result would thus seem to justify the attention which the earlier generation of scholars paid to problems of organizational structure.

Third, Gulick's analysis of the impact of alternative methods of departmentalization was not limited just to the short-run decisions which might be made in a particular structure. He also pointed out longer-term implications for the kind of *learning* that occurred in each kind of structure; indeed, different kinds of people are produced. Organization by process, for example, 'is perhaps less favorable to the development of a separate administrative service, because it tends to bring rather narrow professional specialists to the top of each department, men who are thereby disqualified for transfer to administrative posts in other fields' (p. 24). Their problem is that they 'may be more interested in *how* things are done than in *what* is accomplished' (p. 24).

These remarks are the earliest I have found of a point that is of great importance

for the theory of the modern business corporation. Chandler (1962), Williamson (1975), and others have stressed that organization by function (by 'process') tends to breed managers who know only a particular function. When promoted to higher levels, they are by training and temperament unsuited to handling the broader, integrative aspects of management. On the other hand, organization by product-line divisions (by 'purpose') breeds managers who have some knowledge of a wide variety of different functions, all of which are essential for top-level managers to understand. For business firms which sell a diverse range of products (rather than technical expertise *per se*), the product-line division has proven to be the more appropriate structure. Gulick foresaw, at least to some small extent, why this might be so.

Finally, some of Gulick's observations about other methods of departmentalization have proved prophetic about administrative and political issues which are, by now, widely recognized (and regretted). Regarding the costs of organizing by clientele, Gulick argued that a difficulty

arises from the danger of dominance by favor-seeking pressure groups. Departments set up by clientele seldom escape political dominance by those groups, and are generally found to be special pleaders for those groups, at times in opposition to the general interest of society as a whole. This is in part due to the fact that the organization itself is often brought into being through the action of a pressure group and its demand for a special agency to serve it, but it is also continued through the efforts of the agency once established to marshal and maintain a group in its support. It follows that agencies so set up as to maintain or develop their own pressure backing are peculiarly difficult of democratic control and tend not to fit into a co-ordinated social policy (p. 26).

This is a point which McConnell (1966), Lowi (1969), and Rourke (1969) later developed in greater detail.

It is for reasons like these that we should consider Gulick's essay not as representing 'the high noon of orthodoxy' or any other such nonsense but as a remarkably perceptive essay which was ahead of its time in a number of significant ways. It is regrettable that Gulick himself did relatively little to develop further his own insights. Perhaps it is even more regrettable that Simon's criticisms – if my argument is correct – kept several later generations of students of administration from pursuing Gulick's insights. I suspect that public administration would have been a much richer and more advanced field had this old 'debate' not turned out as it did.

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